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an explanation, it certainly will answer to reason from the opposite direction, viz: that a quick response of a wild plant to cultivation, in changes that are *favorable to man's desires*, but not *especially beneficial to the plant*, is indicative that the supposed wild plant is really feral—especially if such changes are of a nature beneficial to man, yet unfavorable to the plant. Illustrations of this latter proposition seem quite numerous, as, for a general rule in vegetable plants, improvement in form and quality is usually coincident with a lessened ability of the plant to take care of itself, and the highly improved forms seem incapable of becoming feral.

I will say no more, however, as these and allied matters are yet under investigation, but there is indeed a need of an agricultural botany, to be studied under the domination of the evolutionary idea of man as a factor in variation.
—E. LEWIS STURTEVANT.

Keeness of Observation.—After studying botany for three weeks, it was three days more before a single one of the Freshman class of Michigan Agricultural College discovered that the central odd leaflet at the tip of the midrib of a leaf of the mountain ash was usually symmetrical, although they soon discovered that the side leaflets were fullest on the lower edge.

Last year, while studying leaves, it was two days before any member of the Freshman class discovered that the leaf of the common barberry had two joints in following down to the main stem.

Of the members of such a class, very few will see that the geranium has a long torus between the five pistils. Without telling, one in five young students may see that the anthers of Lupine are not all alike; one in three will discover that the anthers of the Mallow are one-celled and kidney-shaped; one in ten, that the anthers are much in advance of the styles; about one in fifteen discovered that although the leaves were opposite, a bud usually appears only in the axil of one of each pair of those of the Sweet William (*Lychnis*). Above this bud is a slight canal, somewhat like that on the cornstalk near and above an ear of corn.—W. J. BEAL, *Agricultural College, Lansing, Mich.*

EDITORIAL NOTES

A LABORATORY for researches on bacteria has been established at Munich.

J. C. GRÖNEWEGEN, of the Botanic Garden of Amsterdam, died in June at the age of 73 years.

PROF. J. H. R. GOEPPERT, the phytopaleontologist, lately died at Breslau in his eighty-fourth year.

OBERLIN COLLEGE has secured the herbarium of Dr. Beardslee, of Painesville, Ohio, containing about 3000 species.

A SECOND EDITION of Prof. W. J. Beal's lecture on the new botany has been issued by Chas. H. Marot, Philadelphia.

PROF. D. P. PENHALLOW has a long article in the *Popular Science Monthly* for July on the nature of the diseases of plants.

DIERVILLA CANADENSIS, Willd. has become wild in several parts of Germany, according to the *Botanische Monatsschrift*.

F. SOÁCHA, of Deutschbrod, Bohemia, is preparing a flora of Austro-Hungary, to contain specimens of the plants described.

GENUINE TRUFFLES have been found in California, according to Dr. H. W. Harkness. They are, however, small and of no commercial value.

THE EXPERIMENTS of Mr. George Murray, of the British Museum, show that perfectly healthy and uninjured live salmon may be attacked by fungus.

THE INTERNATIONAL HORTICULTURAL EXHIBITION at St. Petersburg has awarded a medal to Dr. Gobi, the Russian algologist, for his remarkable herbarium.

DR. S. SCHWENDENER, of Berlin, has been elected foreign associate of the Linnean Society of London, to fill the vacancy made by the death of Dr. Engelmann.

MACMILLAN & Co. have in press an illustrated work, by Worthington G. Smith, on diseases of field and garden crops. This is the first work of the kind in the English language, and one much needed.

PROF. TRELEASE figures and describes the rose rot, *Peronospora sparsa*, in the *Gardener's Monthly* for July. It has become troublesome in the greenhouses of Philadelphia, and threatens to spread and cause much loss to florists.

MR. JOHN C. BRANNER has contributed a valuable study on the "Course and Growth of the Fibro-vascular Bundles in Palms" to the Proceedings of the American Philosophical Society, which we shall take occasion to refer to again.

WE LEARN FROM the Providence papers that a Mrs. Metcalf has given to Brown University thirteen acres of valuable land in that city for the establishment of a Botanic Garden. We sincerely hope that the information is authentic.

MR. WALTER DEANE, of Cambridge, Mass., reports having found *Festuca Myurus*, L. growing very abundantly at Nantucket, Mass., a locality much farther north than that given in Gray's Manual. Specimens have been deposited in the Gray Herbarium.

THE GAZETTE has been delayed this month that we might be able to present as full an account as possible of the attractions for botanists at the coming meeting of the A. A. A. S. Let all who can possibly do so attend this meeting. None will be disappointed.

THE THIRD MEMOIRE on rhizotaxy, by M. D. Clos, is devoted to *Des Racines Caulinaires*, or the arrangement of roots arising from stems. He divides them into those (a) of the nodes, (b) of the internodes, and (c) of the two combined. The first division is the largest, and is divided into those (1) variously placed, (2) beneath the nodes, (3) encircling the nodes, and (4) strictly axillary. The same mode of growth generally pervades a genus or order.

WE LEARN from the *Am. Microscopical Journal* that Prof. Baird will cause the *Utricularie* to be thoroughly eradicated from the ponds of the U. S. Fish Commission, especially *U. vulgaris*, as it is found that the bladders of the plants entrap and kill large numbers of young fish.

PROF. DR. LEIMBACH, of Sondershausen, Germany, has as yet received no response to his offer to exchange for or purchase good herbarium specimens of American *Orchidaceæ*. Collectors will confer a favor by communicating with him, although they may have but a few kinds to offer.

THE SECOND NUMBER OF *Drugs and Medicines of N. A.* is fully equal to the first, if not even better. It is devoted to the several species of *Hepatica* and *Ranunculus*, and is profusely illustrated with original cuts and plates, and a map showing the distribution of *Anemone Hepatica* and *A. acutiloba*.

WE CLIP the following from the *Salem (Mass.) Gazette* of July 15th :

Within a few weeks the arrangement of the botanical collections belonging to the Peabody Academy, which has proceeded quietly for the past nine years, has been completed, and the cabinet of dried plants may now be examined by students in a pleasant room with reference books and microscopes at hand.

A REVIEW of Lesquereux and James' Manual of the Mosses of N. A. by Eugene A. Rau will be published in the September number of the GAZETTE, in which Mr. Rau supplements the habitats of many species as given in the Manual. It will be especially valuable to those who have purchased the book.

PROF. E. RAY LANKESTER says, in the April *Quart. Jour. of Micros. Science*, that "there is no more reason for regarding the chlorophyll corpuscles of *Spongilla* or of *Hydra* as parasites, than there is for so regarding the chlorophyll corpuscles in the leaf of a buttercup"; that is, they are not imprisoned algae, but a legitimate part of the animal.

W. G. SMITH, who professes to be among the most conservative of botanists, promulgates a theory in a late number of the *Gardener's Chronicle* which is more heterodox than the one he flings derision at. He considers that the æcidia spores of *Æcidium Convallariæ*, Schum. are fertilized by direct contact of the spermatia, and then fall to the ground for a period of rest. He believes the species autonomous.

IN A COMMUNICATION to the Linnean Society in March, and later in the *Torrey Bulletin*, Mr. Chas. B. Plowright has shown the genetic connection between æcidium on the European daisy and *Puccinia obscura*, one of the two *Pucciniae* on *Luzula campestris*. The absence of the æcidial form in this country is the text of an interesting article by the same author in the *Torrey Bulletin* for June on the æcidia-bearing *Uredineæ* as to their deportment when the æcidium is present or absent.

MRS. A. LINCOLN PHELPS, of Baltimore, Md., died on the 14th of July in her 91st year. She will be best remembered as the author of Mrs. Lincoln's Botany, a work that was received with much favor in its day. She was the daughter of Samuel Hart, of Connecticut, was educated by her sister, Mrs. Willard, and in her youth was known as Miss Willard of Troy, N. Y. Her first

husband, Simeon Lincoln, an editor, died in 1823, and her second husband, Judge Phelps, of Vermont, in 1848. The larger part of her life has been devoted to teaching, and writing upon scientific and educational subjects. She was for some time editor of the *Putapseo Magazine*.

WE ARE PROMISED a handbook for self instruction in the practical details of microscopic botany adapted to both beginners and advanced students, by the renowned Dr. Edward Strasburger, professor of botany in the University of Bonn. It is entitled "Das Botanische Practicum," and is to deal with all sides of modern microscopical technique, even to the culture of bacteria, and at the same time to impart a general knowledge of botany. It is finely illustrated with 182 cuts, which, together with the material of the text, are almost entirely new, and specially prepared for the work. The author's knowledge in the most abstruse kinds of botanical research, such as the structure of protoplasm, etc., assures us a work of the highest value. It should be translated into English.

CURRENT LITERATURE.

Desmids of the United States and List of American Pediastrums, with Eleven Hundred Illustrations. By the Rev. Francis Wolle. Bethlehem, 1884. 8vo. 168 pp. 53 col. pl.

The author has done a lasting service to microscopic botany by the publication of this excellent work. Such manuals in all classes of the lower plants are much needed, and it is gratifying to note the growing interest in this country in the study of microscopic plants, rendering publications of this kind possible by creating a sufficient demand to pay the cost of production, which is all the authors usually ask or expect. The work before us is a large octavo, well printed, substantially bound, and with fine illustrations. The preface is devoted to a notice of the collectors and systematists who have given attention to this class of American fresh-water algæ. Then follow some remarks on algæ in general, the collection and preservation of desmids, and the structure and reproduction of the same. Most of the remainder of the work is given to the descriptions and illustrations of the nearly five hundred species of desmids and ten of pediastrums. The two largest genera are *Cosmarium* and *Staurastrum*, embracing respectively 108 and 111 species. The only fault one is inclined to find with this part is the omission of full references to the sources of original publication of the species. To be sure the author has indirectly provided for this by giving a list of works consulted, but the direct references are still needed. One half the volume is occupied by the plates. These are well executed, and the sight of them is alone enough to awaken interest in the simple yet diversified and attractive plants. The drawing and engraving are both good, and the hand coloring, by permitting fine gradations in shading and unlimited variety in tints, gives a pleasing and natural effect. A good index completes the volume.

It would not do to close this review without calling attention to the remarkably low price (\$5.00) at which the work is offered. This has been made possible by the author assuming the responsibility of its sale. We hope his philanthropy may meet with fitting reward.